



The Second and Third Known Specimens of the African Molossid Bat, *Tadarida lobata*

by R. L. Peterson¹ and David L. Harrison²

Oldfield Thomas (1891a) described *Nyctinomus lobatus* on the basis of a single specimen from Turkwell, Suk, in northwestern Kenya. The original description was brief and published as a preliminary diagnosis as follows:

"Allied to and of the same size as *N. taeniotis*, Raf. (*N. Cestoni*, Savi), but distinguished by its much larger ears, tragus and antitragus, by the thinness of the car-membranes and keel, and by its belly being pure white. Forearm 63 millim.

Hab. Turquel, Suk, inland British East Africa. Coll. F. J. Jackson, Esq."

In a subsequent publication, Thomas (1891b) provided a more detailed description with some external measurements and a line drawing of the ventral aspect of the head featuring an outline of the ears. The skull was still *in situ* in the sketch, and no description of it appears beyond an indication of the number of lower incisors present.

The holotype, British Museum (Natural History) 93.2.3.7, has been the only known specimen heretofore. It is a spirit specimen with the skull now extracted and appears to be a male, although there is no evidence of scrotal development.

During a recent examination of the molossid bats in the David L. Harrison Collection, one specimen (DLH 5.4244 ♂) from Hatfield, Salisbury, Rhodesia, collected on 15

July 1964, proved to be the second known example of *Tadarida lobata* and provided the first dry skin to give an indication of the normal coloration of the species. The specimen was compared directly with the holotype in the British Museum (Natural History). Details of the latter and those of this second specimen have been combined to portray the facial and ear characteristics of this species (Fig. 1).

The strikingly large ears, arising well forward on its rostrum a short distance from the nostrils, have the leading edges extending well beyond the nose when laid forward. The skin has a conspicuous mid-dorsal white spot in the shoulder region (Fig. 2), and the wings and uropatagium are all pale translucent, greyish in colour. The ears are somewhat darker but also translucent. The pelage of the dorsum is bicoloured, the base white, and the terminal tips approaching Cinnamon-Brown (Ridgway, 1912). The Cinnamon-Brown coloured fur extends around the neck onto the throat and extends posteriorly to the groin as two lateral bands. The mid-ventrum from the chest to the base of the tail region is a unicoloured Warm Buff. This same colour extends from the anal region on each side of the body and onto the wing membranes from the legs to the forearms.

The white central shoulder spot may be an individual variant of no taxonomic significance. The holotype has a faint light area in the same region, but the long immersion in alcohol makes it difficult to ascertain if the white spot is characteristic of the species.

1. Department of Mammalogy, Royal Ontario Museum.

2. Sevenoaks, Kent, England.

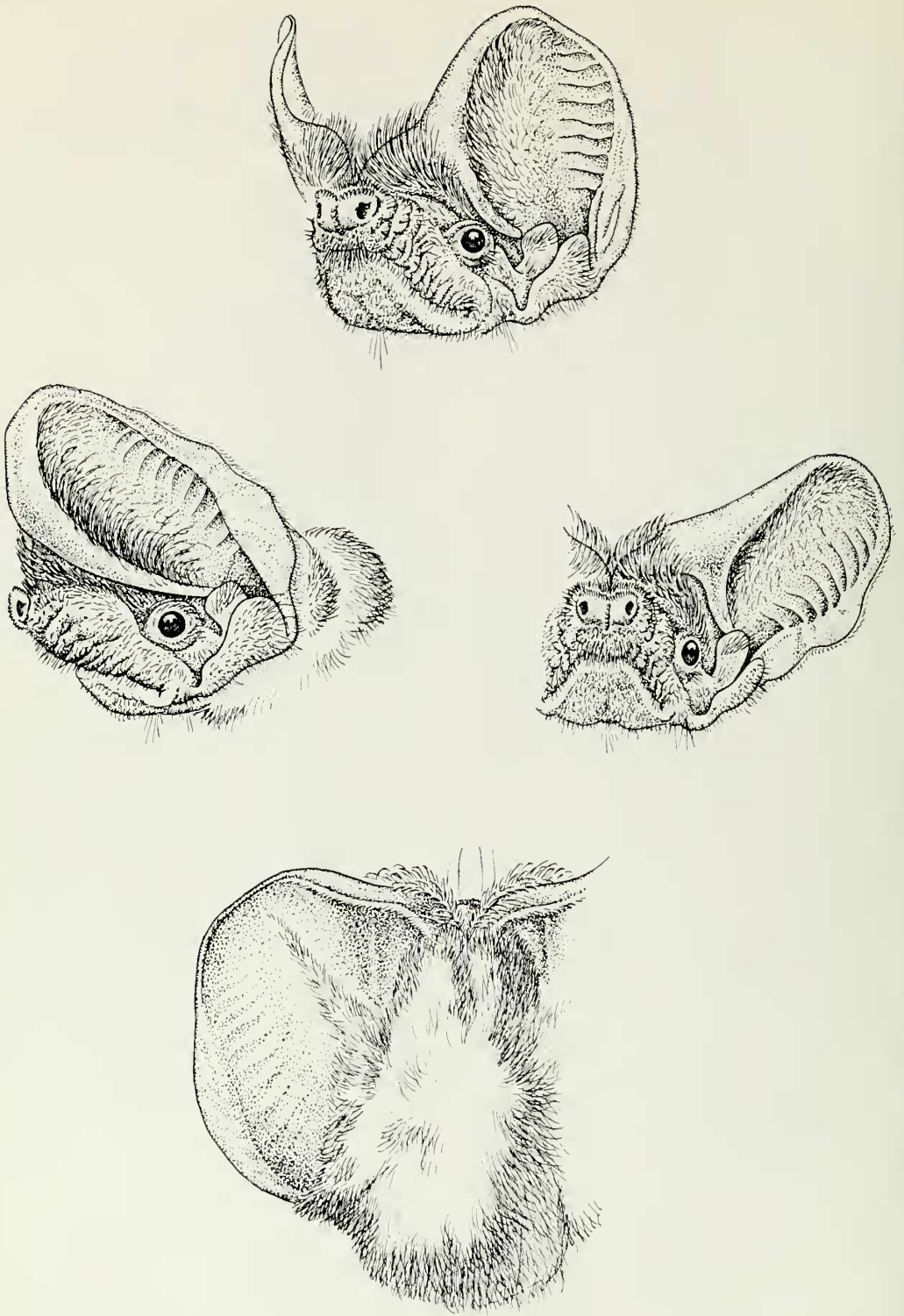


Figure 1
Facial and ear features of *Tadarida lobata* based
on the holotype and DLH 5.4244 ♂.



Figure 2
 Dorsal and ventral aspects of the skin of *T. lobata*
 (DLH 5.4244 ♂).

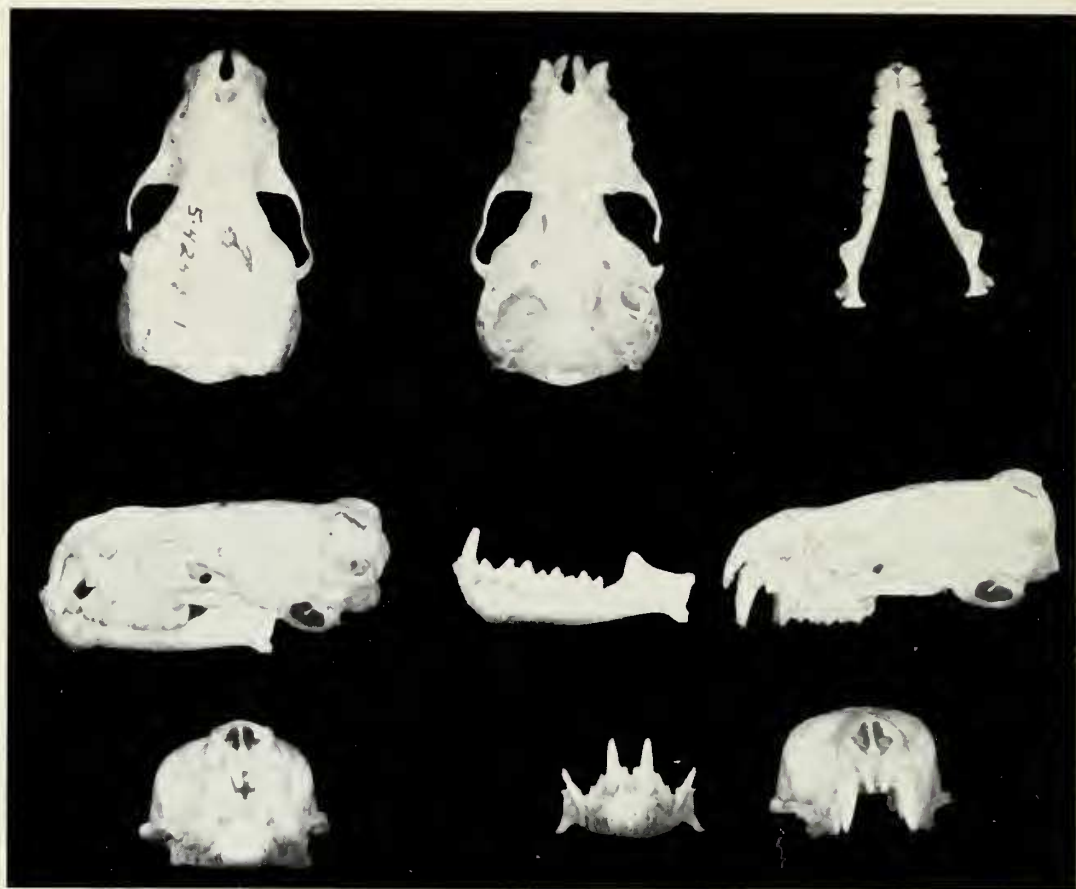


Figure 3
Skull of *T. lobata* (DLH 5.4244 ♂), × 2.

The uropatagium and wings are indeed translucent in the holotype, and the ears appear even more translucent than that of the dried skin (DLH 5.4244 ♂); however, some fading and clearing of the skin may have resulted from long immersion in spirits.

The large tragus in *T. lobata* is truncate distally, with a narrow band of hairs extending across its anterior surface near the tip. The large antitragus is more or less bilobate, with a low anterior lobe and a more elevated posterior lobe. On the inner surface of each ear a conspicuous band of hairs extends laterally to the apex from about 5 mm behind the leading edge of the highly developed keel. From the apex a fringe of hairs extends along the margin of the ear to near the bend of the tip of the tragus. According to

Thomas (1891b), the length of ear from notch of the holotype was 30 mm, which agrees closely with our estimate of the second specimen. Other external measurements of DLH 5.4244 ♂, followed in parentheses by those of the holotype, are: Total length, 134 (133); tail, 53 (56); hindfoot, 12 (13); tibia, 19.5 (19.5); forearm, 58 (63); third digit—metacarpal, 59.4 (64.0); first phalanx, 24.3 (25.7); second phalanx, 23.4 (25.1); fourth digit—metacarpal, 57.0 (61.8); first phalanx, 19.8 (21.6); second phalanx, 9.1 (10.0); fifth digit—metacarpal, 35.8 (39.3); first phalanx, 16.2 (17.5); second phalanx, 6.9 (7.5); weight, 20 grams (—).

More recently, Mr. John Edwards Hill of the British Museum (Natural History) has

identified a third specimen of *Tadarida lobata* and kindly provided us with details to include here. The specimen is also an adult male and was collected by Miss J-J. S. Murrell while on the Oxford University Expedition to the Cherangani Hills, Kenya, in 1969, original collector's number 329. The specimen was collected at Kaibibich (approximately 1°10'N., 35°22'E.), Cherangani Hills, Kenya, on 7 August 1969. It is preserved in alcohol and the skull has been removed and prepared by Mr. Hill. The forearm measured 60.1 mm.

Measurements (in mm) of the skulls of DLH 5.4244 ♂ and the Cherangani Hills specimen, followed in parentheses by those of the holotype, are: Greatest length, 22.7, 24.2 (24±); condylobasal length, 21.9, 23.0 (23.4); palatal length, including incisors, 9.8, — (10.5); palatal length from anterior notch, 7.7, — (8.4); zygomatic breadth, 13.2±, 14.2 (14.2); mastoid breadth, 12.4, 13.2 (13.2); breadth of braincase, 11.6, 11.4 (11.6); rostrum breadth, across lachrymal processes, 7.6, — (8.1); interorbital breadth, from the front below the lachrymal processes, 7.4 — (7.6); height of braincase, 7.3, — (—); M³-M³, 8.8, 9.1 (8.8); C-M³, 8.8, 9.4 (9.1); upper C-C, 5.6, 5.6 (5.6); postorbital (supraorbital) process, 5.6, — (6.0); postorbital constriction, 4.9, 5.0 (5.0); greatest length of mandible, 16.4, 16.8 (17.1); C-M₃, 9.7, 10.4 (10.1).

The skull of *T. lobata* (Fig. 3) is characterized by a relatively broad braincase and an elongate and relatively narrow rostrum and palate. It is generally similar to that of *T. teniotis* but has two instead of three pairs of lower incisors. Moreover, the anterior palatal notch of *T. lobata* is relatively deeper and narrower, and the anterior nasal aperture extends farther posteriorly along the dorsal margin of the skull. In lateral profile the nasals are tipped up from a depression above the orbits. The lower incisors of *T. lobata* are more closely appressed (touching in the holotype; a small space between in DLH 5.4244 ♂) than in *T. teniotis*. In other features *T. lobata* is intermediate between *T. teniotis* and the *T. africana-mastersoni-fulminans* complex as originally suggested by Thomas (1891b), although neither *fulminans* nor *mastersoni* had been described

at that date. The basisphenoid pits (Fig. 4) are slightly smaller and more defined than in *T. teniotis* but not as deep and without the steep sided margins of the pits, particularly anteriorly, of the *T. africana-mastersoni-fulminans* group. With the latter group, *T. lobata* shows similar dental characteristics

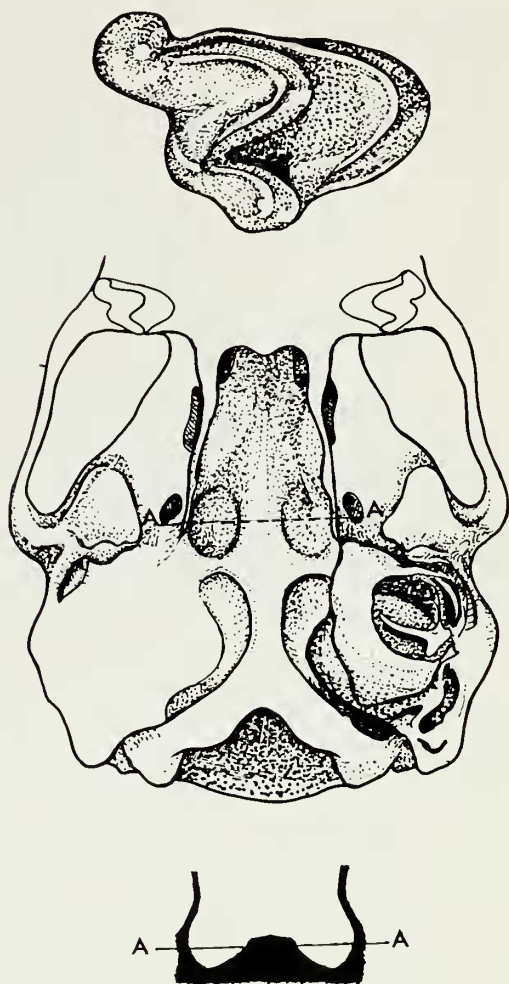


Figure 4
Upper last molar and postpalatal region of the skull showing details of the basisphenoid pits of *T. lobata* (DLH 5.4244 ♂).

(particularly the numbers of lower incisors and position of lower canines and the development of the third commissure on M³), and has similar anterior and posterior palatal shapes. In general size and shape, the skull of *T. lobata* is more similar to *T. fulminans* of Madagascar than to any known

related form in Africa, but differs from this species by having a relatively wider braincase and a relatively narrower rostrum (lachrymal breadth and sublachrymal interorbital breadth) and palate (M^2 - M^3). In these characters *T. lobata* differs even more strongly from *T. africana* and topotypical material of *T. mastersoni*.

In external features *T. lobata* is readily distinguished from *T. teniotis* by its ears and pelage coloration. In general size and coloration it resembles *T. mastersoni*, with which it occurs sympatrically. However, the ears of *T. lobata* are distinctly larger and arise much farther forward on the rostrum, and the upper lips appear to be more wrinkled. There is a greater amount of whitish (Warm Buff as opposed to white or orange) coloration on the under surface, and the ears and the wings and interfemoral membranes are paler and more translucent. The pelage of the second specimen of *T. lobata* suggests that its dorsal coloration may be distinctive; it is Cinnamon-Brown as opposed to either dark brown or reddish as in known examples of the closely related *T. africana*, *T. fulminans* and *T. mastersoni*. A detailed review of this later species complex is in progress (Peterson, R. L. Mss.).

Acknowledgments—We are grateful to the British Museum (Natural History), particularly to Mr. John Edward Hill, for permission to study and photograph the holotype of *T. lobata* and related material, as well as for extending considerable co-opera-

tion, including making available to us the data on the third known specimen discovered by him. We wish to acknowledge the continued assistance of Mr. Reay, H. N. Smithers, Director of Museums, National Museums of Rhodesia, for providing this important specimen and for aid in our research for additional specimens. Financial assistance was provided by the Canadian National Sportsmen's Show, the National Research Council of Canada, the Pure and Applied Science Committee of the University of Toronto through the Department of Zoology, and by funds from the Royal Ontario Museum. Mr. Paul Geraghty prepared Fig. 1, Mrs. Sophia Poray prepared Fig. 4, and Mr. Lee Warren took the photographs used in Fig. 2. Dr. J. R. Tamsitt kindly provided editorial assistance.

Summary—A specimen of *Tadarida lobata* (Family Molossidae) from Salisbury, Rhodesia, in the David L. Harrison Collection and one recently taken on the Oxford University Expedition to the Cherangani Hills, Kenya, 1969, represent the second and third known examples of this species, originally described in 1891 from Turkwell, Suk, northwestern Kenya. The species is illustrated, and its pelage colour described for the first time. Photographs of the skin and skull are provided. Comparative measurements and discussion of taxonomic characteristics and systematic relationships are included.

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